

Governor's Brucellosis Coordination Team

Minutes

April 8, 2004

Members and Technical Advisors Present: John Keck, Monte Olsen, Marty Griffith (representative), Brent Larson, Scott Werbelow, Terry Cleveland, John Etchepare, Donal O'Toole, Erika Olsen, Bill Williams, Bob Wharff, Rob Hendry, Cathy Purves, Terry Pollard, Albert Sommers, Tom Thorne, Frank Galey, Jim Logan, John Hines, Bret Combs, Joel Bousman, Shawn Madden, Brad Mead, Karl Musgrave and Bill Lambert.

Administrative

Dr. Galey opened the meeting with a discussion related to the agenda and other administrative matters at 8:55. The minutes of the March meeting were discussed and approved with changes, which will be reflected in the final draft. Albert Sommers expressed concerns over the meeting schedule and the group discussed the matter. Mr. Sommers also discussed the need to task the sub-committees and organize their efforts. Donal O'Toole suggested that the make-up of the sub-committees may need to be re-evaluated. Meetings on the 3rd Thursday of the Month will be Wednesday/Thursday meetings. For those held on the 4th Thursday, the meeting will be Thursday/Friday meetings. (July, August, October) Dr. Galey also acknowledged that we would need to reconcile the sub-committee membership. Sen. Hines moved approval of the minutes and Terry Cleveland seconded the motion. The motion was approved unanimously. Dr. Galey referenced the website and John Etchepare mentioned that the site, on the Department of Agriculture's (DOA) website, should be operational. Ryan Lance mentioned that the Governor's website would have a link to the DOA page.

Presentation

Don Montgomery

Mr. Montgomery presented regarding the typing of Brucellosis isolates. A handout was provided to the Coordination Team. According to Dr. Betsy Bricker, the isolates between cattle and elk in Idaho were quite different, and thus, the elk and cattle cases could not be linked. The Muddy Creek isolates were quite closely linked, however. The general applicability of the study will help with surveillance and monitoring in the future. Dr. O'Toole commented that he tried to get Dr. Bricker to state that the Muddy Creek isolates were identical, and, while she would not agree to do so, she did say that they were extremely close, the closest she had ever seen.

Member Perspectives

Dr. Bill Williams – As a veterinarian, he mentioned a bias on the disease. He mentioned his history with the disease in Nebraska. He also stated that if the federal government wants to be serious about eradication, that they will fund a new vaccine. He also said that we are going to have to reduce the exposure of cattle and requested that the group come up with recommendations to make these suggestions a reality.

Terry Pollard – Mr. Pollard cited the need to get Free status back, but not at the cost of the elk herds. He also cited to the Game and Fish feedground presentation, made by Mr. Werbelow, that detailed the need to continue with the feedground program.

Cathy Purves – Ms. Purves cited to the biggest issue as being habitat. She said that the Federation has concerns about feedgrounds, not to the point of suggesting closure. If habitat is improved, she suggested that the feedgrounds might not be as necessary.

Albert Sommers – Mr. Sommers stated that he is the author of the Green River Valley Cattlemen's Association proposal, which relates his view. He supports elk and livestock interests, but stated that APHIS may be working on an antiquated goal of eradication. He said that the group might consider assisting APHIS in changing this mindset.

Terry Cleveland – Mr. Cleveland cited to how complex the problem of Brucellosis was. He mentioned the history of the feedgrounds and the Game and Fish Department's vaccination program. He stated that the Department had provided the resources, but had yet to bring Brucellosis to full eradication. He concluded with referencing how important the wildlife resource was to the state.

Tom Thorne – Dr. Thorne said that he believes that the true goal should be eradication, but that such had never been attempted on the scale we face. He said that we could (1) end the eradication program; or (2) kill all of the elk and bison. Neither are acceptable and thus we must reach a compromise that will provide real solutions that are long-term in scope.

Technical Advisor Perspectives

Brent Larson – Mr. Larson addressed the Forest Service's role in the feedground program. He stated that there is public concern over the Service's involvement in that program. He offered to help the Team in any way it deems necessary, but also mentioned the limitations of their involvement.

Scott Werbelow – Mr. Werbelow said that he had concerns about the ability to eradicate, but stated that there is a need to try and control the disease, with proactive approaches. He said that the feedgrounds are a double-edged sword.

Donal O'Toole – There are no simple answers. As a technical advisor, there is a need to learn. He said in his capacity, he is interested in how the State Vet Lab can work better within the confines of Brucellosis vaccination and other issues related to tracking, testing

and controlling the disease. He said that the Team needs to remember that a management strategy is critical, as vaccination will not be a silver bullet.

Erika Olsen – Ms. Olsen indicated that she would be available to help draft recommendations and provide general legal advice on how the team might chose to proceed.

Bret Combs – APHIS has the goal of eradicating Brucellosis and other animal diseases in the domestic livestock herds. Dr. Combs stated that mission could not change as Brucellosis is a bioterror agent and an “emergency” problem in the United States. He said that APHIS is open to change, but cautioned that change is a long-range proposition. Dr. Combs concluded by saying that APHIS is committed to helping the Team, and other related efforts, with funding and other support.

John Keck – The National Park Service is a part of the discussion as solutions will come about through land management efforts. As a land manager, the Service will help develop strategies to help protect constituencies in the state from the impacts of Brucellosis. The Service looks forward to its involvement on the Team.

Presentation

Dr. Tom Thorne – Background on Previous Task Forces and Other Efforts

(Presentation to be added as Appendix)

The past was riddled with animosity, between the National Park Service and the veterinarians and stockgrowers of the state. The Service said that it was not necessary to address Brucellosis, while the others saw it as a problem. From the 1940's to the 1970's, Brucellosis was not regarded as a problem. In the 1970's, Brucellosis in elk, as an issue, was taking shape. Elk feeding and nutrition programs were commenced, with trapping, weighing and testing. During these efforts, Game and Fish noticed a high prevalence of Brucellosis in elk and agreed more research needed to go forward (1971). APHIS was very helpful in the research effort, providing funding and substantive guidance. In the mid-1970's, the need for research facilities became apparent and Game and Fish concluded that it must start recognizing the importance of managing for Brucellosis in its herds. Vaccination programs moved forward as a result, to reduce abortion and Brucellosis prevalence. In 1985, Wyoming received its Brucellosis-Free status and with it, greater attention to elk and bison herds. A tri-state brucellosis committee met and a technical tri-state committee on Brucellosis ensued, in an ad hoc capacity. This effort started the dialogue.

In 1988, the Dubois outbreak happened, with elk and bison being cited as a source. Litigation ensued, with the Game and Fish Department at the epicenter, over who owned the wildlife. The Supreme Court decided that the Department was not liable. Additional litigation, against the federal government, went forward on similar grounds with the same result in federal courts. Governor Sullivan then assembled the first Brucellosis Task

Force. The Task Force met several times and, over the course of a year, made recommendations. (Handout provided) The creation of the Greater Yellowstone Interagency Brucellosis Committee and its Technical Committee was a result of the Sullivan Task Force. The GYIBC was tasked with promoting federal planning and assessment, together with delineating research objectives. A symposium was also held, as per the Sullivan Task Force. The GYIBC agreed that influencing agency objectives might not be appropriate and decided to simply promote the existing agency objectives. The GYIBC also suggested management plans and protocols, especially related to commingling livestock and wildlife. To date, these suggestions have not been implemented. The need for funding was also addressed by the Sullivan Task Force. GYIBC has not been successful in achieving a high degree of funding support, although limited funding for the three involved states has been procured, which is distributed through APHIS. Compensation to livestock producers was also addressed by the Sullivan Task Force, as was concern over public perceptions and avoiding litigation. The Task Force also referenced the need to control wildlife population numbers and concluded that additional feedgrounds were not necessary or desirable. (Dr. Thorne - Evaluating historic migration corridors and routes might be a way to achieve this goal, with the present Team. Also, the Team might need to consider a statewide assessment of Brucellosis, which has not been done since 1969.)

Governor Sullivan's Task Force also made recommendations related to vaccination, transmission between livestock and wildlife, habitat improvement, feedgrounds, modification of Wyoming's damage laws, the need for an educational programs, herd management plans, forage compensation programs, habitat conservation, public health and the need to prioritize research needs. Part of the history of the Sullivan Task Force is that it disbanded with no mechanism in place to reconstitute to discuss progress on its suggestions. Dr. Thorne suggested that this might be altered in the present context. The Sullivan Task Force also cited various problems that might attend the implementation of its proposals, which are detailed in the handout.

The GYIBC has been characterized as moving with glacial speed. While true, it has come a great way in its effort. The technical capacities of the GYIBC and the overall dialogue that has ensued between federal and state agencies are the greatest successes of the Committee. The new MOU, guiding GYIBC, encompasses two large shifts (1) citing eradication as a goal; and (2) involving the tribes in the Brucellosis effort.

Discussion Related to Dr. Thorne's Presentation

Dr. O'Toole asked if the 80% loss of elk numbers, in the absence of feed grounds, was a reality. Dr. Thorne said that number was close. Brad Mead related that carrying capacity numbers might reflect that notion and Mr. Etchepare said that his experience with cattle also seemed to indicate as such. The lack of information on the issue was also cited, but Terry Pollard agreed that, at least 80% of the elk would be lost, but they would not starve to death. Rather, they would seek out feed in the ranching communities and have to be killed in hay stacks and feed lines which would significantly increase commingling

between elk and cattle. Mr. Werbelow cited to the tendency of elk, in the wake of wolf predation and pressure, to stay together in confined areas.

Dr. Glenn Plumb – Yellowstone National Park Supervisory Wildlife Biologist
Park Service Vaccination Program

Dr. Plumb centered his remarks on Brucellosis in bison and vaccination and management efforts related to the species. Dr. Plumb reviewed the Service's jurisdiction, mission and management goals, as well as those of Montana Game and Fish, Montana Department of Agriculture and APHIS (the main partners in bison management in and in close proximity to Yellowstone).

Dr. Plumb related the Service's experiences with the Interagency Bison Management Plan (IBMP). The goals and objectives of the IBMP were presented and included maintaining the wild and free-ranging bison herds and controlling the transmission of disease. The presentation provided a discussion of the distribution and migration patterns of the bison herds and the related "boundary zones" in Idaho, Montana and Wyoming, where bison are known to persist in relation to Yellowstone's boundaries.

Step 1 of the IBMP relies on the spatial and temporal separation of bison and cattle in the north and west "boundary areas." The Service, in short, will not allow for commingling. The use of hazing, capture and release outside of the "boundary zone" is a tool which will be employed. (North) In the West "zone," bison are proscribed, in the area, within a certain time frame, with hazing as a tool to keep the bison away. Capture and release is used in the North as well.

Steps 2 and 3 of the IBMP reiterate the management goal of not allowing commingling, while allowing Brucellosis positive animals to persist, in certain numbers. These steps also allow for the lethal take of bison that do not return to the Park by certain dates.

Other elements of the IBMP include a cattle vaccination program (agreed to by Montana), bison vaccination program (agreed to by the Service (in Park) and Montana (adjacent to Park)), state sanctions for those states that restrict Montana cattle sales because of the presence of Brucellosis-positive bison within the state and a quarantine of seronegative bison to be possibly distributed to re-establish free-ranging herds elsewhere. In conclusion, Dr. Plumb indicated that the IBMP is a long term program that relies on adaptive management principles and, while the Plan is a volatile issue, the Service remains committed to the project.

Discussion Related to Dr. Plumb's Presentation

Dr. O'Toole asked about the cost of the program and the concern about *Brucella abortus* after cattle are released onto areas where bison previously ranged. Dr. Plumb said that the Service's contribution was about \$1.2 million. Dr. Arnold Gertonson (APHIS), said that additional funds are provided, which are considerable (from five separate agencies).

The concern over the transmission of Brucellosis is alleviated in about a month prior to May or April and about a week thereafter. Dr. Gertonson stated that a 45 day gap was becoming standard, which is contingent on many different conditions. Rob Hendry asked about the removal of cattle from Horse Butte, which the Service described as being assented to by the permittee. Mr. Hendry also asked about a lawsuit, relative to hazing, brought by the Buffalo Field Campaign. Dr. Plumb related that the suit was not directly speaking to hazing, but between those doing the hazing and those wanting to prevent it. Shawn Madden asked about the Park's intention on population numbers and the seroprevalence level in bison. Regarding seroprevalence, Dr. Plumb said that the rate is 1% in northern range elk. In the Park, the rate is between 40% and 50% in bison, which is a chronic rate. In the southern end of the GYA, the rate in bison can reach 80%. Dr. Plumb said that the Park does not set population objectives. The 3,000 bison number, mentioned in the presentation, is only meant to provide a number that will trigger management. Senator Hines asked if the effort with Montana would be duplicated in Wyoming. Dr. Plumb indicated that, because few animals leave the Park into Wyoming, such an effort is not necessary. There is informal consultation with the Forest Service where there are bison that leave the Park into Wyoming. Senator Hines also asked about the perception that Montana's management of bison is arbitrary and outside the purview of the Park Service. Dr. Plumb said that Montana and the Park Service's efforts are quite coordinated, which the Service is trying to accentuate in the press and otherwise.

Duane Williams – Group Rules of Engagement

Mr. Williams addressed the group regarding effective teamwork techniques. Dr. Galey charged the group to consider what decision-making protocol it would like to utilize (consensus, vote, majority and minority points of view going forward to Governor, etc.). Mr. Williams broke the Team into sub-groups to discuss and identify key ideas related to group work, highlighting two or three central ideas. Each group reported on their progress, including the following ideas (all suggestions are listed, even duplicates):

- Speak only when requested
- Everyone's opinion is heard
- When you hear the opinion, you don't have to agree, but you have to be respectful
- Need structure on dialogue
- Everyone should have an opportunity to speak
- The Chairman must be in charge
- All get to speak
- No single individual has a veto
- Reach resolution and move on, if no resolution, the issue can be revisited later at the discretion of the Chairman (there must be full-consideration of the issue)
- Consider all views
- Respect
- Prepared participation
- Be open-minded
- Uninhibited discussion
- Be aware of why you were chosen to serve

Everyone is charged with enforcing and abiding by the ground rules, that cannot be solely left to the Chairman. The key ideas related to group work will be presented at the next meeting for the group's final consideration.

Subcommittee Work

The Team divided into the four Subcommittees (Cattle, Human Health, How We Respond to Next Outbreak, Wildlife) created at the first Team meeting in Pinedale to discuss their respective subject. Dr. Galey asked that the groups to discuss the following: (1) what are the issues; and (2) how can we structure the discussion. The Team dissolved into subcommittees and discussed their respective subject.

Logistics

Ryan Lance discussed payment vouchers, state plane use, Lara Azar's contact information, teleconferencing and the website. The group agreed that the next meeting should be held in Casper, because of limitations in Lander.

Subcommittee Reports

Terry Cleveland – Wildlife

The Wildlife Subcommittee developed twenty-six issues, including feed ground issues and wildlife management in those areas in close proximity to livestock, relative to wildlife in the Brucellosis context. Mr. Cleveland presented the issues to the Team and stated that the issues could be circulated to the group. Dr. Galey requested that the subcommittee prioritize the issues according to probability for success and overall need.

Jim Logan – How We Respond to Next Outbreak

Dr. Logan mentioned that, prior to the meeting, he had solicited suggestions from his group. He acknowledged that he and Dr. Combs had learned a great deal from the recent outbreak, but cited the need for communication and a reaction protocol in the wake of another Brucellosis incident. The group discussed financial support for those producers affected by long-term quarantine and for surveillance testing.

Dr. Galey mentioned that the Brucellosis-Free status would not necessarily be available to the state until an epidemiological report had been completed. Drs. Gertonson, Logan and Combs stated that the State Veterinarian was not eligible to reapply for Free Status, at the earliest, on February 13, 2005.

Karl Musgrave – Human Health

Dr. Musgrave stated that there is not much information about the human health implications related to Brucellosis. The need for research is apparent. The subcommittee also mentioned that there is a need, from a mental health perspective, to inform the

general public on the disease. Particular reference was made to stress in affected ranchers. A white paper fact sheet was also suggested.

Rob Hendry – Livestock

The Livestock subcommittee discussed testing, monitoring, the need for a database, how the animal identification system would affect the database, herd monitoring, herd planning (with overlays, timing references, etc.), vaccination and the need for long-term testing. Dr. Logan detailed the testing rules that are in place as additional guidance for the work that the Livestock subcommittee will complete.

Dr. Galey encouraged those that do not serve directly on a particular subcommittee to involve themselves, if interested or if they would like to provide comment.

Public Comment

Lloyd Dorsey – discussed Dr. Plumb's presentation. Mr. Dorsey asked Dr. Thorne about RB 51 and the differentiation between safe v. effective vaccines. Dr. Thorne indicated that there is a difference, but that generally vaccines have to meet the GYIBC's requirements on safety and efficacy. Dr. Thorne mentioned that the efficacy question is in conflict, but generally GYIBC wants to know if the vaccine does not do harm and shows a level of efficacy in reducing abortion (not infection) (as per Dr. Gertonson). Mr. Dorsey stated that APHIS has gone through the process of getting approval for RB 51. He accentuated the difference between safety and efficacy. Mr. Dorsey also requested that the Pinedale presentations be posted on the website. Ryan Lance and Dr. Galey agreed to do so, together with those presented during the present meeting. Mr. Dorsey also cautioned that declaratory statements should be used very carefully. He also asked that the states of Idaho and Montana be consulted.

Jim Magagna – thanked the group and cited his hope that meaningful change could come about. Mr. Magagna stated that the need for consensus is important, but also cited the need to detail those things not agreed to in consensus. He admonished the Team to not let its recommendations end up on a shelf and to follow-up on its work to ensure that things happen on the ground.

Meredith Taylor – indicated that she would be providing information to the Team for its consideration. Ms. Taylor indicated that there is a need to evaluate the current solutions and not reinvent the wheel. Consideration should also be made regarding habitat and migration corridors, that they may not be necessary. Lower seropositive rates on the Elk Refuge were cited by Taylor, in the absence of vaccination as an example of alternate thinking. Ms. Taylor also mentioned the need to not allow commingling, citing Dr. Plumb's presentation. She also mentioned her frustration that the Governor did not appoint more conservation groups and women to the Team. Terry Pollard stated that he

didn't think the elk would stand and starve; they would more likely end up being shot. He also suggested including notes from Dr. Thorne's presentation as an appendix to the minutes.

Dave Reynolds – involved with bison breeding and production. Mr. Reynolds stated that a very small number of animals are causing the problems in Wyoming. Mr. Reynolds indicated and described the elk as the “sacred beast” and that it maintains the highest percentage of Brucellosis seropositivity. Reynolds indicated that bison are not the issue and that elk were the problematic species.

Attachment: Dr. Thorne's Presentation

HISTORIC REVIEW AND UPDATE ON PREVIOUS COMMITTEES

Tom Thorne 8 April 2004

Brucellosis has a long history in the Greater Yellowstone Area; present for at least 100 years

Thorne attended his first meeting on brucellosis in the spring of 1971 in Gardiner, MT

- It was not the first meeting on brucellosis
- The meeting was very acrimonious
- Conflict characterized brucellosis meetings

Brucellosis-related issues in the 1960s and 1970s were characterized by conflicts, lines drawn in the sand, and positions set in concrete!

- Most conflict and attention was focused on bison of Yellowstone National Park
- National Park Service (YNP) vs. federal and state veterinarians and stock growers
- Conflicting mandates between YNP, state livestock health officials, and APHIS/Veterinary Services
- YNP reacted to previous proposals of depopulation or test and slaughter, did not recognize brucellosis as introduced disease, resisted disease management

Scope of brucellosis in elk as a problem only beginning to be recognized and acknowledged in the 1970s

- Brucellosis first detected in elk at National Elk Refuge in 1930
- Detected at Greys River elk feedground and a couple of other elk feedgrounds in the 1940s, but was largely ignored by the Game and Fish Department and state and federal livestock health officials
- APHIS and State Vet had recognized a persistent brucellosis problem in a small cattle herd adjacent to the Greys River (Alpine) feedground

In the 1970s, G & F began extensive testing at Alpine and NER feedgrounds; less extensive testing at other feedgrounds

- Brucellosis was consistently present at high prevalence everywhere G & F looked on feedgrounds

G & F started controlled research on brucellosis in elk at the Sybille Wildlife Research and Conservation Education Center in 1971-72

- Effects of brucellosis in elk similar to those seen in cattle with a few minor exceptions: Elk seem to be more resistant to brucellosis than cattle; Elk experience an approximate 50% abortion rate compared to 60-70% in unvaccinated cattle; Elk experience a slightly slower and weaker serologic response than cattle; Elk do not have retained placenta and concomitant infertility following abortion
- Research was partly funded by APHIS, but mostly funded by G & F
- Brucellosis research was done with extensive advice and input by APHIS experts on brucellosis (e.g. Dr. Wynn Ray, etc.), University of Wyoming scientists, and national and international brucellosis scientists and regulatory officials
- Research endorsed by Wyoming Stock Growers Association, progress reported to WSGA, elk to cattle transmission study done at request of WSGA
- G & F, WSGA, and UW tried to get federal funding to establish a bison research facility either at Laramie or Sybille, but were unsuccessful

By mid to late 1970s research at Sybille and testing on feedgrounds had demonstrated effects of brucellosis on elk and that it can be transmitted to cattle; concluded:

- Brucellosis is an introduced disease in elk that has a negative impact on elk and should be addressed
- Brucellosis-infected elk serve as a threat to cattle and, therefore, to the National Brucellosis Eradication Program
- G & F should initiate research on vaccination of elk with Strain 19 vaccine (the only vaccine available at that time) to determine if vaccination can be used as a tool to control/eliminate brucellosis in elk

By 1985 concluded vaccine is safe in elk if use a correct dose (reduced) and that it is about as effective in elk as it is in cattle at preventing abortion

- Started trial vaccination of free-ranging feedground elk using a biobullet system at Alpine feedground in 1985
- The rationale behind vaccination was that Strain 19 vaccine would reduce the abortion rate among infected feedground elk; this would result in reduced transmission among elk and reduced risk to cattle; reduced transmission among elk would eventually result in reduced prevalence among feedground elk
- Over a long period, it might be possible to reduce the prevalence to a low enough level that innate resistance of elk might help eliminate the disease; or the prevalence could be lowered to the point that some other mean (e.g. limited test and slaughter) could be used without destroying the elk populations
- It was recognized that vaccination would be a long-term endeavor

In 1985 Wyoming received its brucellosis-free status under the National Brucellosis Eradication Program

- Wyoming's achievement of brucellosis-free status, along with a national goal of eradication within the next 5-10 years, resulted in increased attention to brucellosis in bison and elk in the GYA; this attention would continue to grow

June 1988 Tri-state Veterinary Meeting in Jackson, WY

- Tri-state Yellowstone National Park Brucellosis Meeting recommended forming Tri-state Brucellosis Technical Committee
- First meeting of Tri-state Brucellosis Technical Committee in October 1988 in Little Rock, AR at U S Animal Health Association meeting
- Technical Committee met 1-2 times per year
- Technical Committee had no authority, but did serve to begin to establish dialogue and understanding among agencies and parties

1988-89 Parker Land and Cattle bovine brucellosis outbreak

- East of continental divide near Dubois, WY
- Wyoming, Montana, and most of country free of bovine brucellosis
- After extensive epidemiologic investigation, APHIS determined source to be elk or bison
- Litigation resulted in form of damage claim against G & F that eventually went to State Supreme Court; ruled that not compensable, source likely elk or bison but unable to determine if wildlife source was under state or federal jurisdiction
- Subsequent litigation against Department of Interior for damages; Federal Judge Brimmer ruled not compensable, that elk or bison were the likely source but couldn't determine jurisdiction, was complimentary of G & F brucellosis program and critical of Department of Interior brucellosis efforts

May 1999, Governor Sullivan established Wyoming Brucellosis Task Force

- State Veterinarian-Dr. Norm Swanson succeeded by Dr. Don Bosman
- Governor's Office-Rod Miller
- Wyoming Department of Agriculture-Director Don Rolston
- Game and Fish Department-Director Pete Petera, Chief of Services Art Reese, and Wildlife Veterinarian Supervisor Tom Thorne
- Wyoming Livestock Board-Glenn Taylor and Ed Stukenhoff
- Wyoming Wildlife Federation and sportsmen-Tory Taylor
- Wyoming Stock Growers Association-Bob Budd

Wyoming Brucellosis Task Force established task force goal

- "Protect the integrity of Wyoming's free-ranging bison and elk populations and livestock industry by eradicating wildlife brucellosis by the year 2010"
- Task force recognized a number of problems stand in the way of achieving this goal
- Task force recognized the problem involves the entire GYA, not just Wyoming, and it affects all the federal and state wildlife management, land management, and animal health agencies along with stock grower and conservation organizations in the three affected states

Wyoming Brucellosis Task Force made 47 recommendations under 12 categories; many of the recommendations have been accomplished or are ongoing; many other recommendations should be revisited by the Wyoming Brucellosis Coordination Team, G & F, or other entity and are listed below:

- Establish a national consensus and federal legislation assuring the GYA brucellosis problem will be solved and sufficient funding
- Establish agency policies compatible with recommended objectives
- Complete G & F elk and bison Brucellosis Herd Unit Action Plans and include thorough evaluations of site-specific public and private lands where brucellosis-infected wildlife and livestock commingle
- Establish rankings of Risk of Transmission for all areas on infected wildlife and livestock commingling and categorize each as relatively high, moderate, or low risk of transmission; high risk areas will be given highest priority in actions to reduce the potential for transmission
- Make timely report with site-specific recommendations for each instance of commingling between brucellosis infected wildlife and livestock on how the risk of brucellosis transmission will be eliminated or significantly reduced
- Use G & F Brucellosis-Feedground-Habitat specific Brucellosis Herd Unit Action Plans as pattern to form region-wide, but site specific, actions plans integrated to fit the GYA
- Consider impacts compensation might have on eradication because compensation could be cheaper than eradication
- Conduct blood test surveys on hunter-killed elk and bison of all populations surrounding the GYA to more accurately establish the geographic area involved
- Vaccination of high percentages of elk on a feedground should be achieved for several years before action is taken that will result in reduced use of feedgrounds by elk
- Separate for better administrative and public understanding the two aspects and goals of calfhood vaccination of cattle and vaccination of elk and bison
- All possible short-term and long-term methods that can be implemented to prevent transmission of brucellosis from wildlife to cattle should be examined, and where appropriate, implemented as soon as possible
- Recognize that vaccination of wildlife might not be as effective in reducing brucellosis prevalence in a short period of time as test and slaughter/depopulation, but it is much more likely to be acceptable, and is likely the only option that does not adversely impact one user group or another
- Authorized elk feedgrounds are unique in the GYA to Wyoming and Wyoming Game and Fish Department should take the lead in evaluating and explaining the relationship between feedground, brucellosis, and native winter range
- Wyoming Game and Fish Department utilize established Brucellosis-Feedground-Habitat Action Plan process to examine each feedground and management options that might reduce intra- and inter-specific transmission of brucellosis
- Encourage Wyoming Game and Fish Department habitat enhancement projects and allow time to demonstrate their potential for attracting and supporting elk

- Eliminate or reduce the reliance on elk feedgrounds, with the following considerations: public acceptance; effects on Herd Unit population objectives; effects upon livestock forage and stored feeds; effects upon risk of transmission of brucellosis to livestock; and effects and costs of increased depredation on cash crops
- Where possible as determined by Herd Unit Action Plans feed only during severe winters and delay feeding until winter conditions are severe
- Work to establish legislation supported by livestock, outfitter, and conservation interest groups prohibiting unauthorized private feeding of elk and bison
- Propose legislation to modify existing damage laws to lessen or reduce the liability associated with elk depredation on stored feeds in order to allow reduction in reliance on feedgrounds
- Complete the Wyoming Game and Fish Department's Herd Unit Action Plan process and include a thorough evaluation of each feedground and the presence and absence of current future alternatives to feedgrounds
- Evaluate public, political, economic, and biological ramifications of reducing elk numbers to match available native winter range
- Evaluate a forage compensation program that would encourage increased landowner accommodation of elk on private land
- All agencies work cooperatively to protect wildlife winter ranges from deleterious development or winter recreation activities
- Consider herd units in which feeding does not occur and examine methods to ensure that feeding does not become necessary
- Identify research needs and solicit funding

In 1995 the MOU establishing the Greater Yellowstone Interagency Brucellosis Committee, recommended by the Wyoming Brucellosis Task Force, was signed by the Secretaries of Interior and Agriculture and Governors of Wyoming, Montana, and Idaho

- Early meetings were difficult and acrimonious
- Sponsored two symposia on brucellosis in the GYA and published proceedings (with help of G & F)
- Wrote and adopted an informative white paper on brucellosis in the GYA
- Adopted a resolution recommending against new feedgrounds in the GYA
- Information and Education Plan for Citizen Participation
- Video on brucellosis in GYA
- Extensive summary of research completed, ongoing, and needed
- Extensive literature data base
- Technical reports on male transmission of brucellosis, brucellosis in horses, vaccine safety and efficacy, etc.
- Task Directive for a Programmatic EIS
- Established and maintained communications/understanding/dialogue/cooperation among member agencies probably most significant accomplishment
- Currently rewriting MOU which will more aggressively address elimination of brucellosis and will provide for Tribal involvement